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DARBY & DARBY P.C.
P. O. BOX 5257
NEW YORK, NY 10150-5257

EXAMINER	
SPIEGLER, ALEXANDER H	

ART UNIT	PAPER NUMBER
1637	

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/807,234	PARK ET AL.	
	Examiner	Art Unit	
	Alexander H. Spiegler	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-35* is/are pending in the application.

4a) Of the above claim(s) *12-24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. After further consideration, a new restriction requirement has been made in accordance with 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

Group I, claim(s) 12-19, drawn to nucleic acid probes and primers.

Group II, claim(s) 20-24, drawn to methods of preparing a DNA chip.

Group III, claim(s) 25-35, drawn to methods of diagnosing an HPV infection.

It is noted that Claims 22 and 24 refer to Claim 9; Claim 9 has been previously canceled. Despite the obvious typographical error, Claims 22 and 24 have been included in the restriction.

Further Restriction

The claims of Group I-III are drawn to a multitude of nucleic acids. Each of the different nucleic acids and methods using said nucleic acids lack the same or corresponding special technical feature.

Therefore, upon election of one of Groups I-III, Applicant is additionally required to elect a **single** nucleic acid **probe** and a **pair** of nucleic acid **primers** that correspond to said probe. Each probe and primer pair have different structures and function to bind to different segments of an HPV sample. This requirement is not to be construed as a requirement for an election of species, since each of the compounds is not a member of a single genus of invention, but constitutes an independent and patentably distinct invention.

2. The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical of Group I is a probe complementary to HPV DNA selected from the group consisting of SEQ ID NOS: 1-19, whereas the special technical feature of Group II is a process for preparing a DNA chip, whereas, the special technical feature of Group III is methods of diagnosing an HPV infection. Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for several reasons. First, the probe consisting of SEQ ID NO: 1 is not an inventive concept, since SEQ ID NO: 1 is known in the art and is taught by Meijer et al. (See GenEmbl Accession No. A46136). Furthermore, the DNA chip of Group II, can be made by a materially different process, such as by the indirect binding of a nucleic acid probe to said chip via another probe, such as biotin or in a sandwich assay comprising label extender probes and label probes; the nucleic acids of Group I could be used in an entirely different manner than in methods of diagnosing an HPV infection, such as in a nested PCR reaction or in a method of treatment, and the methods of Groups II and III, are directed to methods having different method steps, starting materials, and goals. In addition, with respect to the further restriction, each probe and primer pair have different structures (noted by their differing SEQ ID NOS) and function to bind to different segments of an HPV sample. Accordingly, because Groups I-III lack the same or corresponding special technical features the restriction is deemed proper.

Applicants' Arguments

In Applicants' response, filed on December 16, 2003, Applicants' elected Group III (now claims 25-35) and SEQ ID NOS: 1 and 24-25. Applicants' traverse the restriction to a single

probe and primer pair, and argue the probes and primers themselves do not represent the claimed inventions, and rather, the use of different probes and primer pairs in the steps of the method represent "different embodiments" of the claimed invention. See Applicants' response on page 10.

Response to Applicants' Arguments

Applicants' arguments have been considered, but are not persuasive for the following reasons. As stated above, each of the probes and primer pair bind to different regions of HPV DNA, and therefore, represent distinct products. For example, each of the probes of SEQ ID NOS: 1-19 detects a different type of HPV (e.g., high risk or low risk HPV and a particular HPV type, such as HPV type 16, 18, 31, 33, 35, etc.). See pages 9-10 of the specification. Finally, even though Applicants' assert the probes and primers only represent "different embodiments", these "different embodiments" represent different special technical features as presented above (e.g., the probes lack a special technical feature because SEQ ID NO: 1 is known in the art). Accordingly, the restriction requirement is maintained.

Status of the Claims

3. Claims 12-35 are pending, Claims 12-24 have been withdrawn from consideration as being drawn to a non-elected invention, and Claims 25-35 are rejected herein.

Priority

4. Applicants' claim to priority under 35 U.S.C. 119 of Korean Application No. 2000-13161, filed on March 15th, 2000 has been acknowledged. It is noted that an English translation of this Korean Application has not been received.

Information Disclosure Statement

5. The information disclosure statement filed April 6, 2001 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the "List of Prior Art Materials" submitted by Applicants' is not considered to be a PTO-1449 or PTO/SB/08A and 08B or its equivalent. See MPEP 609. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

CRF/Sequence Notes

6. The Sequence Listing filed in this application complies with the requirements of 37 CFR 1.821-1.825 and has been entered. It is noted that non-ASCII content has been deleted from the end of the files.

Specification

7. The disclosure is objected to because of the following informalities:

A) The disclosure contains an embedded hyperlink and/or other form of browser-executable code. (See page 2, line 33) Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

B) The use of the trademarks has been noted in this application. (See page 2, line 32 and page 11, line 10) These trademarks should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 25-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A) Claims 25-35 are indefinite over "to give biotin-containing amplified DNA" because it is not clear as to how "biotin-containing amplified DNA" is obtained, since there is no mention of biotin prior to amplifying the DNA "to give biotin-containing amplified DNA".

B) Claims 25-35 are indefinite because claim 25 is drawn to a method for diagnosis of HPV; however, the final step is for detecting DNA bound on the surface of a DNA chip. The claims do not set forth the relationship between the detection of the DNA bound on the surface of the DNA chip and the method for diagnosis. Therefore, it is not clear as to whether the claims

are intended to be limited to a method of diagnosing HPV or for the detection of the DNA bound on the surface of the DNA chip.

C) Claims 25-35 are indefinite because it is not clear as to how amplified DNA is labeled after hybridizing with the probes. It is not clear as to whether the probes have a labeling system in addition to the biotin-containing amplified DNA, or the labeling occurs following the hybridization of the biotin-containing amplified DNA to unlabeled probes.

D) Claims 28 over "position markers" because it is not clear as to what is meant or encompassed by this recitation, and it is not defined in the specification.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 25, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gravitt et al. (J Clin. Microbiol. (1998) 36(10): 3020-3027), in view of the Stratagene Catalog (1988).

Gravitt et al. teaches a method of genotyping (and diagnosing) HPV infection comprising:

(a) amplifying DNA obtained from clinical samples to give biotin-containing amplified DNA (see abstract; and page 3021, teaching the primers comprise biotin labels, which will give biotin-containing amplified DNA);

(b) applying the amplified DNA thus obtained to a DNA chip comprising DNA probes, which have nucleotide sequences complementary to DNA of HPV, to hybridize the amplified DNA with DNA probes (see abstract and pages 3021-22); and

(c) detecting DNA bound on the surface of the DNA chip after labeling the amplified DNA hybridized with the probes of the DNA chip with a means for labeling (see pages 3021-22).

It is noted that "DNA chip" is not defined in the specification, and therefore, the solid support used by Gravitt meets this limitation. With respect to step (c) and Claim 30, Gravitt teaches the probes are labeled with BSA, and after hybridization of the PCR products and the probes, the hybridized products were washed with streptavidin-horseradish peroxidase and then detected (see pages 3021-22).

With respect to Claim 28, Gravitt teaches the chip further comprises "position markers" to locate the probes (see page 3022, for example).

While Gravitt teaches all of the reagents in the claimed kit used in the claimed method (e.g., a DNA chip with probes that have nucleotide sequences complementary to DNA of HPV, primers for amplifying DNA obtained from clinical samples, and a means for labeling amplified DNA hybridized with the probes of the DNA chip), and the method of using these reagents, Gravitt does not teach all of these reagents in a HPV genotyping kit.

However, reagent kits for performing DNA detection assays were conventional in the field of molecular biology at the time the invention was made. In particular, the Stratagene catalog discloses the general concept of kits for performing nucleic acid hybridization methods and discloses that kits provide the advantage of pre-assembling the specific reagents required to perform an assay and ensure the quality and compatibility of the reagents to be used in the assay.

Accordingly, in view of the teachings of the Stratagene Catalog, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified packaged the reagents used in the method of Gravitt in a HPV genotyping kit so as to have provided the expected benefits of convenience, quality reagents and cost-effectiveness for practitioners of the art.

13. Claims 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gravitt et al. (J Clin. Microbiol. (1998) 36(10): 3020-3027), in view of the Stratagene Catalog (1988), as applied to claims 25, 28 and 30 above, and further in view of Meijer et al. (WO 95/22626).

Gravitt and Stratagene teach a method for diagnosis of Human Papillomavirus (HPV) infection using a HPV genotyping kit, wherein the HPV genotyping kit comprises: (i) a DNA chip with probes that have nucleotide sequences complementary to DNA of HPV; (ii) primers for

amplifying DNA obtained from clinical samples; and (iii) means for labeling amplified DNA hybridized with the probes of the DNA chip, which comprises the steps of:

(a) amplifying DNA obtained from clinical samples with the primers of the HPV genotyping kit to give biotin-containing amplified DNA;

(b) applying the amplified DNA thus obtained to the DNA chip of the HPV genotyping kit to hybridize the amplified DNA with the DNA probes of the DNA chip; and

(c) detecting DNA bound on the surface of the DNA chip after labeling the amplified DNA hybridized with the probes of the DNA chip with the means for labeling of the HPV genotyping kit. (see above)

While Gravitt and Stratagene teach various HPV probes, the references to do not teach the probe comprising SEQ ID NO: 1. Furthermore, while Gravitt and Stratagene teach various HPV primers, the references do not teach the primers having SEQ ID NOS: 24 or 25.

However, Meijer teaches that SEQ ID NO: 31 (which is identical to the instant SEQ ID NO: 1) is a probe specific for detecting HPV-type 16 (see page 15 and 31; see also GenEmbl Accession No. A46136). Meijer teaches this probe can be used in the rapid detection of high-risk HPV types and enhances detection by not allowing cross-hybridization (see page 5). In addition, Meijer teaches the primers having SEQ ID NOS: 24 and 25 (see abstract, pages 5, 10 and 39; see also GenEmbl Accession Nos. A46106 and A46107). With respect to GenEmbl Accession No. A46106, the bases that are mismatched between the two sequences are actually the same bases when viewed in light of the specification's description on page 11, lines 34-36. For example, in Accession No. A46106, the first mismatched base is a "k", which corresponds to a "g" or a "t" (see page 11, line 35). Meijer teaches a "g" at that position. Therefore, Meijer

teaches the same base at that position. The next mismatch is an "h", which corresponds to a "t", "a", or "c" (see page 11, line 35). Meijer teaches a "t' at that position, etc. Applying the same reasoning throughout the rest of Accession No. A46106 and to Accession No. A46107, it will be evident that Meijer teaches the claimed sequences. Furthermore, on pages 5 and 10, Meijer teaches his primers can have between 1-5 nucleotide substitutions. Meijer teaches these primers improve HPV detection in cervival smears (see page 5, for example).

Accordingly, in view of the teachings of Meijer, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Gravitt so as to have used Meijer's HPV probe, in order to have rapidly and more effectively detected high-risk HPV-type 16 infection. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Gravitt so as to have used Meijer's HPV primers, in order to have improved HPV detection in cervical smears.

14. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gravitt et al. (J Clin. Microbiol. (1998) 36(10): 3020-3027), in view of the Stratagene Catalog (1988), as applied to claims 25, 28 and 30 above, and further in view of Bevan et al. (Biochem J. (1990) 267(1): 119-123).

The teachings of Gravitt and Stratagene are presented above. The references teach a method of diagnosing HPV by performing PCR using biotin labeled primer and a dUTP to give a biotin-containing amplified DNA (see Gravitt on page 3021, second column). The references do not teach performing PCR using a biotin-16-UTP.

However, obtaining biotin-containing amplified DNA using biotin-16-UTP, instead of using biotin labeled primers, is well known in the art. Specifically, Bevan teaches using biotin-16-UTP in a PCR reaction for detection of HPY type 16 (see abstract and page 120).

Accordingly, in view of the teachings of Bevan, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Gravitt and Stratagene to have used biotin-16-UTP, instead of a biotin labeled primer, in order to have obtained biotin-containing amplified DNA for use in detecting HPV type 16.

15. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gravitt et al. (J Clin. Microbiol. (1998) 36(10): 3020-3027), in view of the Stratagene Catalog (1988), as applied to claims 25, 28 and 30 above, and further in view of Sena et al. (USPN 5,273,881).

The teachings of Gravitt and Stratagene are presented above. The references teach a method of diagnosing HPV using a biotin-binding material. Specifically, the references teach the biotin-binding material is streptavidin-horseradish peroxidase. The references do not teach the biotin-binding material is streptavidin-R-phycoerythrin.

However, the use of streptavidin-R-phycoerythrin as a biotin-binding material is well known in the art. Specifically, Sena teaches the use of streptavidin-R-phycoerythrin can be readily used instead of streptavidin coupled with peroxidase for detecting biotin, stating,

> The presence of biotin or digoxigenin can be detected by streptavidin or an anti-digoxigenin antibody, respectively, where the streptavidin (or avidin) or anti-digoxigenin is radioactively labeled, enzyme labeled (e.g., alkaline phosphatase, peroxidase, beta-galactosidase or glucose oxidase) or fluorochrome-labeled (e.g., fluorescein, R-phycoerythrin, or rhodamine).

(See col. 4, lines 39-46).

Accordingly, in view of the teachings of Sena, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Gravitt and Strategene so as to have used streptavidin-R-phycoerythrin as a biotin-binding material, in order to have achieved the benefit of providing an effective biotin detection reaction.

16. Claims 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gravitt et al. (J Clin. Microbiol. (1998) 36(10): 3020-3027), in view of the Stratagene Catalog (1988), as applied to claims 25, 28 and 30 above, and further in view of Shalon et al. (US 2003/001295).

The teachings of Gravitt and Stratagene are presented above. The references teach a method of diagnosing HPV using an HPV genotyping kit comprising a DNA chip with probes attached to said DNA chip. The references do not the chip is prepared by the process comprising, (i) preparing 5' terminal amine-linked DNA probes which have nucleotide sequences complementary to DNA of HPV, (ii) affixing the DNA probes thus prepared to an aldehyde-derivatized surface of a solid support; and (iii) reducing excessive aldehydes not reacted with amine.

However, with respect to Claims 32 and 35, Shalon teaches a method of forming microarrays (DNA chips) comprising (i) preparing 5' terminal amine-linked DNA probes which have nucleotide sequences complementary to DNA of interest, (ii) affixing the DNA probes thus prepared to an aldehyde-derivatized surface of a solid support (CEL Associates silylated slide); and (iii) reducing excessive aldehydes not reacted with amine with $NaBH_4$. (See paragraphs 140-141, and generally, paragraphs 64, 69, 74-75, 77 and 96). With respect to Claim 33, Shalon teaches various ranges of the concentration of probes which would react with the aldehyde-deriviatized surface of the solid support. (See paragraphs 42-43, 63-64, 69, 71, 73, 77, 88, for

example). With respect to Claim 34, it is an inherent property of the interaction between the amine and aldehyde groups of Shalon that a Schiff's base reaction will take place. In addition, Shalon teaches the arrays are incubated in a humid chamber for four hours, which would encompass conditions between 30-40^0 C and 70-100% humidity, and more specifically, would encompass performing the Schiff's base reaction at 37^0 C and over 70% humidity. Shalon teaches the chip can be used in genotyping and diagnostic assays, and provides the advantages of assaying a plurality of samples simultaneously, is easy to use and provides a highly sensitive detection. (See paragraphs 40, 64, 69, and 96, for example)

Accordingly, in view of the teachings of Shalon, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Gravitt and Stratagene so as to have formed the DNA chip by the process of the instant invention, in order to have achieved the benefit of providing a more efficient, easy to use and highly sensitive DNA chip for diagnosing HPV infections.

17. Claims 32-33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gravitt et al. (J Clin. Microbiol. (1998) 36(10): 3020-3027), in view of the Stratagene Catalog (1988), as applied to claims 25, 28 and 30 above, and further in view of Zamatteo et al. (Analytical Biochemistry (2000) 280:143-150).

The teachings of Gravitt and Stratagene are presented above. The references teach a method of diagnosing HPV using an HPV genotyping kit comprising a DNA chip with probes attached to said DNA chip. The references do not the chip is prepared by the process comprising, (i) preparing 5' terminal amine-linked DNA probes which have nucleotide sequences complementary to DNA of HPV, (ii) affixing the DNA probes thus prepared to an

aldehyde-derivatized surface of a solid support; and (iii) reducing excessive aldehydes not reacted with amine.

However, with respect to Claims 32 and 35, Zamatteo teaches a method of forming microarrays (DNA chips) comprising (i) preparing 5' terminal amine-linked DNA probes which have nucleotide sequences complementary to DNA of interest, (ii) affixing the DNA probes thus prepared to an aldehyde-derivatized surface of a solid support; and (iii) reducing excessive aldehydes not reacted with amine with $NaBH_4$. (See abstract; page 145, second column; pages 146-147; and page 149). With respect to Claim 33, Zamatteo teaches the concentration of the probes can be between 100-500 pmol/ul. (See pages 145 and 149). Zamatteo teaches this method of producing microarrays is advantageous because the aminated DNA is directly bound without the help of a coupling agent, which provides a more efficient assay.

Accordingly, in view of the teachings of Zamatteo, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Gravitt and Stratagene so as to have formed the DNA chip by the process of the instant invention, in order to have achieved the benefit of providing a more efficient assay by being able to bind aminated DNA is directly without the help of a coupling agent.

Conclusion

18. No Claims are allowable.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander H. Spiegler whose telephone number is (571) 272-0788. The examiner can normally be reached on Monday through Friday, 7:00 AM to 3:30 PM.

If attempts to reach the examiner are unsuccessful, the primary examiner in charge of the prosecution of this case, Carla Myers, can be reached at (571) 272-0747. If attempts to reach Carla Myers are unsuccessful, the examiner's supervisor, Gary Benzion can be reached at (571) 272-0782.

Papers related to this application may be faxed to Group 1637 via the PTO Fax Center using the fax number (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alexander H. Spiegler
March 29, 2004

CARLA J. MYERS
PRIMARY EXAMINER